Environmental Assessment
(Revised)
for

BISHOPS HAT Commercial Thinning
OR O90-EA- 02-02

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UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
EUGENE DISTRICT

ENVIRONMENTAL ASSESSMENT NO. OR
Bishops Hat Commercial Thinning O90-EA-02-02

1.0 INTRODUCTION

The Bureau of Land Management (BLM) proposes to commercially thin approximately 155 acres of timber requiring approximately 5 acres of road right-of-way in T. 17 S., R. 07 W., Section 21, Willamette Meridian. The proposed treatment area is located within the Long Tom Watershed of the Coast Range Resource Area, Eugene District, in Lane County, approximately 5 air miles west of Noti, Oregon. Watershed analysis was completed for the Long Tom Watershed in October of 2000 by the Eugene District BLM. Timber harvesting would occur on land in the General Forest Management Area (GFMA) portion of the Matrix land use allocation (LUA) as identified in the *Eugene District Record of Decision and Resource Management Plan (Eugene District ROD/RMP), June 1995.*

1.1 Management Objectives and Goals for Land within the GFMA Portion of the Matrix Land Use Allocation

Matrix land is Federal land outside of reserves and special management areas that will be available for timber harvest at varying levels. The management objectives under Matrix LUA, as directed under the Eugene District ROD/RMP are:

Produce a sustainable supply of timber and other forest commodities to provide jobs and contribute to community stability.

Provide connectivity (along with other allocations such as Riparian Reserves) between Late-Successional Reserves.

Provide habitat for a variety of organisms associated with both late-successional and younger forests.

Provide important ecological functions, such as dispersal of organisms, carryover of some species from one stand to the next, and maintenance of ecologically valuable structural components, such as down logs, snags, and large trees.

Provide early-successional habitat.

1.2 Conformance

This Environmental Assessment (EA) is tiered to and in conformance with the *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents within the Range of the Northern Spotted Owl and the Standards and Guidelines for Management of Habitat for Late-*

Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl (ROD), April 1994, and the *Eugene District Record of Decision and Resource Management Plan, June 1995 (Eugene District ROD/RMP)* as amended by the *Record of Decision for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines, USDA Forest Service and USDI Bureau of Land Management January 2001.* Actions decided in this EA are in conformance with the (Aquatic Conservation Strategy Objectives, page B-11) and the Standards and Guidelines for Riparian Reserves (pages C-31 to C-37) of the ROD.

1.3 Purpose of and Need for Action

This section shall briefly specify the underlying purpose and need to which the BLM is responding in proposing the alternatives including the proposed action.

The purpose of the proposed action is to provide forest products while maintaining or enhancing the productivity, sustainability, and diversity of the forest ecosystem. Approximately 2.7million board feet (MMBF) of approximately 50 to 58 year old timber would be offered for sale via a timber sale contract. The need for the action is established in the Eugene District ROD/RMP which directs that timber shall be harvested from Matrix lands to provide a sustainable supply of timber. Another need for this action is to accelerate the attainment of ACS objectives (ROD, RMP pg18). "Under the Aquatic Conservation Strategy, Riparian Reserves are used to maintain and restore riparian structures and functions of streams, confer benefits to riparian-dependent and associated species other than fish, enhance habitat conservation for organisms that are dependent on the transition zone between upslope and riparian areas, improve travel and dispersal corridors for many terrestrial animals and plants, and provide for greater connectivity of the watershed." (ROD, page B-13). Watershed analysis was completed for the Long Tom watershed and supported the need for silvicultural treatments within Riparian Reserve to accelerate the attainment of ACS objectives. (ROD, B-32)

2.0 ISSUES

2.1 Issues Selected for Analysis

Issue 1: *How will timber harvest and roading affect attainment of Aquatic Conservation Strategy (ACS) Objectives at the watershed scale?*

In order for a proposal to comply with the Northwest Forest Plan, it must be shown that the project, at a minimum, does not prevent or retard attainment of the nine ACS Objectives on a watershed or landscape scale. Activities described in the Proposed Action and alternative may have some effect on BLM's ability to meet these objectives.

Issue 2: *How will timber harvest and roading affect dispersal habitat for northern spotted owls.*

The project area is located approximately four miles northwest of the South Valley Area of Concern (AOC). This AOC was designated as a strategically important spotted owl dispersal link between the Coast Range and Cascade mountains.

Issue 3: *Would timber harvest and roading have any effects to Survey and Manage (S&M) species?*

The red tree vole is the only S&M species in need of consideration in this project area.

2.2 Issues Not Selected for Analysis

Issue 4: *How would building new roads and landings, and ground based yarding in the riparian reserves affect attainment of Aquatic Conservation Strategy Objectives at the watershed scale?*

No ground based yarding or road building is planned within the riparian reserves. therefore new construction is not a concern for this project. We would renovate approximately 600 feet of renovation of existing road 17-7-22.4 within 100 to 200 feet of the inception point of stream 5.This road segment, a portion of spur B, would be subsoiled at completion of the sale.

No other issues were identified by the Interdisciplinary Team or during public scoping for this project.

3.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION

This section shall describe the potential actions, including all alternatives.

Affected Resource	Current Condition	Alternative 1 Proposed Action	Alternative 2 Upland Only	Alternative 3 No Road Construction	Alternative 4 No Action
Percent of Spotted Owl Dispersal Habitat within the Forested Portion of the long Tom Watershed- Federal Lands	36558 Acres (56%)	36558 Acres (56%) 155 acres of dispersal habitat degraded, but still functional	36558 Acres (56%) 110 acres of dispersal habitat degraded, but still functional	36558 Acres (56%) 85 acres of dispersal habitat degraded, but still functional	36558 Acres (56%) No habitat affected
Matrix Silviculture		Approximately 110 acres thinned to a density of 80 to 105 TPA	Approximately 110 acres thinned to a density of 80 to 105 TPA	Approximately 70 acres thinned to a density of 80 to 105 TPA	No thinning
Riparian Reserve Treatment		Approximately 45 acres thinned to a density of 70 to 95 TPA	No Riparian Reserve Treatment	Approximately 15 acres thinned to a density of 70 to 95 TPA	No Riparian Reserve Treatment
Volume (MMBF) Matrix Riparian Reserve Total		 1700 750 2450	 1700 0 1700	 1050 255 1305	 0 0 0
Road Construction and Decommissioning		3700 feet of dirt spur	3700 feet of dirt spur	No road construction	No road construction
Yarding		cable and tractor	cable and tractor	cable and tractor	none

3.1 Alternative 1 - Proposed Action (Commercial Thinning in Upland and Riparian Reserves)

The proposed action would commercially thin approximately 155 acres of 50 to 58 year old timber requiring 5 acres of road right-of-way (see EA Map). This alternative includes both upland thinning (approximately 110 acres) and Riparian Reserve thinning (approximately 45 acres).

Upland

The objectives of upland thinning are to recover suppression mortality, accelerate growth of residual trees, and enhance stand development by moving these densely stocked stands toward a more open condition. Thinning would be done so that residual trees would be spaced 18 to 24 feet apart, yielding a density of 80

to 105 trees per acre. The stand would retain a relative density of 30 to 40% and a stand basal area of 130 to 140 square feet per acre.

Riparian Reserves

The objectives of Riparian Reserve thinning are to meet the long term objectives of the Aquatic Conservation Strategy (ACS) and to develop large trees within the reserve more quickly than would develop naturally. Leave tree selection would favor the retention of large dominant and codominant conifers. Thinning would be done so that residual trees would be spaced 22 to 28 feet apart, yielding a density of 70 to 95 trees per acre. The stand would retain a relative density of 20 to 30% and a stand basal area of 120 to 130 square feet per acre. Approximately 45 Riparian Reserve acres would be thinned.

In order to maintain existing water quality and to meet ACS objectives, a non-treated buffer, approximately 50 feet on each side of the streams, would be required and no ground base yarding would be allowed in riparian reserves.

Some skyline corridors may be needed through the stream buffers to gain the necessary suspension of logs during yarding. There would be no yarding of logs through these skyline corridors. Skyline corridors would be kept approximately 150 feet apart to minimize impacts to reserve trees and would not exceed 12 feet in width. Skyline corridor trees would be felled and left parallel to the stream to the extent possible within the non-treated Riparian Reserve area and retained on site to provide coarse woody debris.

Survey & Manage Protection Buffers

Mollusks

Survey and Manage (S&M) mollusk species previously requiring surveys include the Oregon Megomphix (*Megomphix hemphilli*), papillose taildropper (*Prophysaon dubium)*, and the blue-grey taildropper (*Prophysaon coeruleum*). These species have been removed from the S&M list in the Coast Range Resource Area (USDA &USDI, 2001), and no longer require pre-project surveys. Consequently, no such surveys for these species were conducted.

Red Tree Vole

A total of 2 trees containing red tree vole nests (one active and one inactive) were identified during pre-project surveys. Because of their close proximity, these nests would be included in one buffered site of eleven acres to meet the Management Recommendations for the Oregon Red Tree Vole (Version 2.0, 2000).

Vascular plants, bryophytes, fungi and lichens

Protocol surveys have been completed. *Loxosporopsis corallifera* (lichen) and *Ulota megalospora* (moss) were found during pre-project surveys. These species has been dropped from the list of species requiring management. No buffers are required for these species.

Roads

This sale would use existing road number 17-7-27. In addition to this road about, 3700 feet of temporary dirt spur roads would be constructed to allow further access to this unit. Spur A would require 2,100 feet of new construction off Road No. 17-7-21.1. Spur B would require 1300 feet of improvement to an existing dirt road plus 300 feet of new construction. Summer logging and hauling would be required on dirt spurs. All temporary constructed dirt spurs would be built during the dry season and would be designed to 14 foot

wide subgrades with no ditch. Drain dips and rolling dips would be used where possible to provide for drainage. No new stream crossings would occur with this new spur construction. New dirt spurs constructed within the project area would be subsoiled upon completion of logging.

Yarding

During yarding, log lengths would be limited to a maximum of 40 feet to protect residual trees. Yarding would be done from newly constructed temporary spurs and renovated existing road grades, with cable or tractor equipment. All yarding would be to designated or approved landings.

Cable Yarding

One end suspension of logs would be required during yarding, and intermediate support would be required where necessary to attain the required suspension. Wherever possible, yarding corridors would be limited to 12-feet in width. Cable yarding with one end suspension would be required within the Riparian Reserves. Directional felling and yarding away from streams would be required to provide for streambank stability and water quality.

Tractor Yarding

All tractor skid trails would be predesignated and approved by an authorized officer, would be limited to slopes less than 35 percent, and would occupy less than 10% of the tractor logged area. Tractor yarding would be limited to periods of low soil moisture (generally less than 25%). Logs would be tractor yarded to designated or approved landings. Skid trails used in the harvesting would be water barred and subsoiled with a self-drafting winged subsoiler to minimize soil compaction and maintain long term soil productivity upon completion of the sale. No tractor yarding of any kind would occur within Riparian Reserves on these units.

Other Design Features

The following project design features would be implemented in conjunction with the proposed action. Project design features are operating procedures normally used to avoid or reduce adverse environmental impacts (as developed by the interdisciplinary team), or are required standards and guidelines included in a timber sale contract.

1. In order to slow the spread of noxious weeds, clean all yarding and road construction equipment including excavators prior to arrival on BLM Land.

2. For the purpose of long term productivity and maintenance of biological diversity, retain to the extent possible all down material of advanced decay (Decay Class 3, 4 or 5) for coarse woody debris (CWD).

3. To provide habitat for cavity dependent wildlife and to protect the future source of down logs, reserve snags not posing a safety hazard. Use directional felling and yarding to protect residual green trees and snags consistent with State safety practices. Retain snags felled as danger trees as CWD.

4. Suspend harvest activities during sap flow season (April 15- June 15) to limit bark / cambium damage to residual trees.

5. Retain all Pacific yew, western redcedar, and hardwoods to the extent possible to maintain diversity.

6. Leave in place unmerchantable tree tops and limbs to contribute to soil productivity. After logging, clear slash from within 25 feet of the mainline roads for fire hazard reduction.

7. No ground based yarding would be allowed in riparian reserves.

3.2 Alternative 2 (Commercial Thinning in Upland Only)

Under this alternative, approximately 110 acres would be commercially thinned (see EA Map). This alternative includes only upland thinning, with no Riparian Reserve thinning.

Upland

The objectives of upland thinning are to recover suppression mortality, accelerate growth of residual trees, and enhance stand development by moving these densely stocked areas toward a more desirable condition. Thinning would be done so that residual trees would be spaced 18 to 24 feet apart, yielding a density of 80 to 105 trees per acre. The stand would retain a relative density of 30 to 40% and a stand basal area of 130 to 140 square feet per acre.

Wildlife Survey and Manage Protection Buffers

Mollusks

Survey and Manage (S&M) mollusk species previously requiring surveys include the Oregon Megomphix (*Megomphix hemphilli*), papillose taildropper (*Prophysaon dubium)*, and the blue-grey taildropper (*Prophysaon coeruleum*). These species have been removed S&M list in the Coast Range Resource Area (USDA &USDI, 2001) and no longer require pre-project surveys. Consequently, no such surveys for these species were conducted.

Red Tree Vole

A total of 2 trees containing red tree vole nests, (one active and one inactive), were identified during pre-project surveys out side the riparian reserve. Because of their close proximity, these nests would be included in one buffered site of eleven acres to meet the Management Recommendations for the Oregon Red Tree Vole (Version 2.0, 2000).

Vascular plants, bryophytes, fungi and lichens

Loxosporopsis corallifera (lichen) and *Ulota megalospora* (moss) were found during preproject surveys. These species have been dropped from the list of species requiring management. No buffers are required for these species. Protocols surveys have been completed.

Roads

Road access under this alternative does not differ from that of Alternative 1-Proposed Action.

Yarding

Yarding under this alternative does not differ from that of Alternative 1-Proposed Action

Other Design Features

Design features under this alternative do not differ from that of Alternative 1-Proposed Action.

3.3 Alternative 3- No Road Construction and Decommissioning

This alternative is similar to Alternative 1 except that there would be no road construction, all yarding would be to existing roads. Under this alternative there would be approximately 70 acres of upland and 15 acres of riparian reserves available for treatment.

3.4 Alternative 4 - No Action

This stand would be allowed to grow along its current growth trajectory. Under this alternative, no timber would be harvested from these stands, no new spurs would be constructed and no existing roads would be renovated for timber harvesting activities.

4.0 AFFECTED ENVIRONMENT

This section describes the relevant resource components of the existing environment.

4.1 Vegetation

Landscape Description

Long Tom Watershed

The Long Tom Watershed is located in Lane County, west of the city of Eugene. The watershed contains approximately 262,749 acres. The watershed landscape pattern is that of checkerboard ownership with approximately 21,809 acres (8%) managed by the BLM. Of the BLM administered land within the Long Tom Watershed, 8% is managed as Wetlands, 47% is managed as General Forest Managment Area, 9% is managed as Connectivity, and 36% is managed as Late-Successional Reserves. Approximately 3,180 acres, or 16.0% of BLM managed forest lands, are in late-successional condition (i.e., $\geq$ 80 years old), meeting the 15% mature habitat retention requirement for the watershed.

Stand Description

The stands within the treatment area are 50 to 58 year old even-aged stands dominated by Douglas-fir. Minor components include western hemlock, western redcedar, and hardwoods. A few pacific yew were observed as well. The stands were established between 1942-1950 following logging.

4.2 Botanical Resources

Special Status, and Survey & Manage Species

Extensive surveys of the project areas were conducted for federally listed Threatened, Endangered, BLM Special Status, and Survey and Manage plant and fungal species in the project area. No federally listed Threatened or Endangered plant species were located during botanical surveys.

Loxosporopsis corallifera (lichen) and *Ulota megalospora* (moss) were found during pre-project surveys. These species have been dropped from the list of species requiring management. No buffers are required for these species. No other Survey and Manage species were found during surveys.

Noxious Weeds and Non-Native Plant Species

Scotch broom is present along the roads going to the project.

4.3 Geology and Soils

Geology

The Bishops Hat timber sale unit is geologically mapped within the Flournoy/Tyee Formation that consists of massive and rhythmically bedded feldspathic and micaceous sandstone and subordinate siltstone. Each bed is graded and ranges from coarse sandstone at the base to fine sandstone and siltstone above (Walker and Macleod, 1991).

Field reconnaissance and air photo interpretation (1969-2000) indicate that no large landslides have occurred during this historical time in the unit. However, flood events, steep slopes and concentrated flows may lead to the development of future unstable areas. Although landslides naturally provide in-stream structure with gravels, cobbles, boulders and large wood, deforestation of headwalls has accelerated the frequency of landslides (Sessions, 1987) and removed an excess amount of area from being productive soils. Therefore it is important that tree buffers be maintained in steep concave slope areas.

Soils

Predominant soils found in the Bishops Hat timber sale include Bellpine, Honeygrove and Peavine (U.S.D.A. 1987). These clay soils are highly erodible, compact easily, and disturbed, tend to stay in suspension longer. The soils are moderately deep and have a high Site Index that correlates to a high amount of on-site nitrogen and potential site productivity.

Bellpine soils are moderately deep (20-40 inches) and well-drained. The surface layer is a silty clay loam, the subsoil is silty clay, with soil horizons containing between 40-55% clay. Roads constructed through these soils are subject to slumping. Rock fragment in the soil profile is typically less than 15%. Permeability is slow due to the heavy textures and absence of coarse fragments. These soils are susceptible to compaction. Hazard erosion is high in steeper slopes.

Honeygrove soils are deep (40-60 inches) and well drained. This soil dominates the timber sale. The surface layer is a silty clay loam, and the subsoil is up to 60% clay. There may be up to 15% rock fragments present. Permeability is moderately slow. These soils are susceptible to compaction.

Historic logging practices

Historic logging practices disturbed the soil of much of the timber sale area, and evidence still exists on the lanscape. 1969 air photos indicate that that Portterf Creek had previously been logged. BLM documentation notes that logging occurred on the southside of Portterf Creek in 1942. The northside was logged in 1947, but there is evidence of more recent logging in the 1969 air photo. Much soil disturbance is still visible in the 1969 air photo. Ground conditions as a result of timber harvest include high reflectance of soils from scars of corridor yarding through the creek and bare ground where yarding operations took place. Opening of the riparian canopy along Portterf Creek and its tributaries left high reflectance on the air photos indicating an increase of sediment delivered to stream channels, and scour tracks in channels. More recent air photos indicate that hardwoods occupy many of the disturbed sites and riparian areas. During field reconnaissance in August of 2001, corridor scars and skid trails were still evident; however a good organic layer on the soil surface and vegetation obscure much of the previous soil disturbance. Also single track Off Highway Vehicle (OHV) use was noted along the historic midslope skid road on the north side of Portterf Creek within the timber sale unit.

TPCC Designation

The Timber Productivity Classification Code (TPCC) designation for the timber sale unit is RLR. This class indicates that reforestation could be a problem because of inadequate light. Additional site preparation and/or treatments could be necessary to achieve target stocking levels.

4.4 Fisheries, Aquatic, and Riparian Resources

The proposed unit is in the Long Tom watershed. Elevations range from 900 feet to 1100 feet, putting the entire unit in the rain dominated zone. Cutthroat Trout were found in Portterf Creek and estimated to extend 1500 feet into the unit. At this point there is a waterfall and it was believed to be a barrier to fish migration. No fish were found above this point.

There are eleven streams associated with this proposed sale. Stream one starts about 200 feet from the edge of the clearcut. This small stream goes under ground occasionally. The stream is in a small draw. Stream two is similar, starting about 400 feet from the edge of the clearcut. These two streams do not have deep draws until they come together close to the main stream. The third stream has a more pronounced draw but does not show on the topographic map. There is a dry draw just above stream 3. Stream 4 is a fork of the main stream, about 300 feet long. Stream 5 is the main stream, Portterf Creek. Stream 6 starts east of a large brushy area. Slopes on this side of the main creek are steeper. Stream 7 starts very close to the ridge top. There are two forks where it starts out. Stream 8 is a shorter stream, only about 300 feet long. Stream 9 connects to the main stream in the area of the property line. This stream starts as two forks. Stream 10 is actually on private and the inception point of the stream is on the property line. Stream 11 is in the northeast portion of the unit and flows northeast into Booker Creek.

4.5 Wildlife

Threatened and Endangered Species

Within the unit, there are no activity centers or suitable habitat for any terrestrial wildlife species listed or proposed for listing under the Endangered Species Act.

The closest spotted owl center is located approximately 1.75 miles from the proposed unit. This unit is comprised of dispersal habitat for the northern spotted owl.

No habitat for the marbled murrelet exists within the proposed unit. However, several scattered Douglas firs with appropriate nesting structure do exist within 0.25 mile to the north of the proposed unit. No surveys for marbled murrelets were pursued in the action area.

No bald eagle habitat areas are located in the vicinity, and no bald eagles have been documented in the area.

The above information is based on current knowledge of these species within the vicinity of the action area. If any new information regarding these or other protected animals arises, this action would be subject to mitigation measures intended to safeguard the species.

Survey and Manage Species

Survey and Manage (S&M) mollusk species previously requiring surveys include the Oregon Megomphix (*Megomphix hemphilli*), papillose taildropper (*Prophysaon dubium)*, and the blue-grey taildropper (*Prophysaon coeruleum*). These species have been removed S&M list in the Coast Range Resource Area

(USDA &USDI, 2001) and no longer require pre-project surveys. Consequently, no such surveys for these species were conducted.

Red Tree Vole

A total of 2 nests (one active and one inactive) were identified during pre-project surveys outside the riparian reserve. Because of their close proximity, these nests would be included in one buffered site of eleven acres, following the Management Recommendations for the Oregon Red Tree Vole (Version 2.0, 2000).

Other Special Status Species

No Special Status Species (other than S&M) were documented during interdisciplinary surveys of the action area. A list of these species suspected of occurring in the vicinity may be found on page 3-76 of the Eugene District RMP.

Other Wildlife Species

Sign left by blacktail deer was observed throughout the unit. Deer and elk use this area from time to time for cover. Nearby clearcuts on private land would be used for foraging by both deer and elk. The project area presently serves as escape and hiding cover (and to a lesser extent, a foraging site) for deer and elk.

In the vicinity of the project area, there are few scattered large standing and down trees that could provide denning sites for black bears, but this component is limited and of poor quality. Signs of black bears have been observed within the area indicating some level of use by these mammals.

4.6 Cultural Resources

A cultural resource inventory of the proposed area has not been conducted. Past pre-project cultural resource surveys conducted in conjunction with surface disturbing actions in the Coast Range physiographic province have not resulted in the discovery of significant cultural properties. Following the signing of the national Programmatic Agreement, the Oregon BLM and the Oregon Historic Preservation Office developed a protocol agreement recognizing the paucity of discoverable historic properties in the Coast Range. Under this protocol, pre-project cultural resource surveys will not be conducted in the Coast Range physiographic province. The Protocol Agreement does set forth procedures covering post-project cultural resource surveys which would be implemented.

4.7 Recreation and Visual Resources

The unit is within the RMP's management VRM Class IV, and is for the most part, hidden from Highway 126. This unit is in an area of dispersed recreation activities such as hunting and driving for pleasure.

4.8 Fuels/Downed Woody Debris

The pre-harvest fuel loading in the project area is low, approximately 6.4 tons per acre. Some areas of moderate ladder fuels exist, but do not spread throughout the treatment area. Some decay class 4 and 5 CWD exists on the units. The brush in the unit survey areas was heavy, with some large openings. Salal dominates the brush species, with large amounts of red huckleberry, Oregon grape, vine maple, and sword fern also present.

5.0 ENVIRONMENTAL CONSEQUENCES

This section explains and summarizes the environmental consequences including direct, indirect, short-term, long-term, and cumulative effects of all the alternatives.

This environmental assessment incorporates the analysis of Environmental Consequences, including cumulative effects, in the *USDA Forest Service and USDI Bureau of Land Management Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl,* February 1994, (Chapter 3 & 4) and in the *Eugene District Final Proposed Resource Management Plan/Environmental Impact Statement,* November 1994 (Chapter 4). These documents analyze most effects of timber harvest and other related management activities. None of the alternatives in this assessment would have cumulative effects on resources beyond those effects analyzed in the above documents. The following section supplements those analyses, providing site-specific information and analysis particular to the alternatives considered here.

5.1 Unaffected Resources

The following resources are either not present or would not be adversely affected by the proposed action or any of the alternatives: Areas of Critical Environmental Concern, prime or unique farm lands, floodplains, wetlands, invasive non-native plants, Native American religious concerns, solid or hazardous wastes, Wild and Scenic Rivers, Wilderness, and low income or minority populations. The following section supplements those analyses, providing site-specific information and analysis particular to the alternatives considered here.

Cultural Resources

Cultural Resources are not expected to be affected by the proposed action or any of the alternatives.

Air Quality

Burning activities, if required for site preparation, would be consistent with Oregon Smoke Management Regulations. The proposed burning would be of very short duration and would have no local short or long-term impacts on air quality. All burning would meet the State Implementation Plan for smoke management and the National Ambient Air Quality Standards set forth in the Clean Air Act. This resource will not be addressed further in the analysis.

5.2 Alternative 1 - Proposed Action

Issue 1: How will timber harvest and roading affect attainment of the Aquatic Conservation Strategy (ACS) Objectives?

The following is a site-specific analysis of the effect of the Proposed Action on attainment of the ACS objectives:

Objective 1. The Proposed Action would maintain the existing distribution, diversity, and complexity of watershed and landscape-scale features. No effects on the streams or their aquatic communities are expected. The thinned stand would retain adequate supplies of future large woody material.

Objective 2. The Proposed Action would maintain the existing spatial and temporal connectivity within and between watersheds. Drainage network connections would be protected with the Riparian Reserves around all streams and other hydrology features. With no new stream crossings of any hydrology feature,

the existing physical and chemical routes would be maintained.

Objective 3. The Proposed Action would not adversely affect the physical integrity of the aquatic system. The Riparian Reserves would ensure that density management would not affect streambank integrity or tree/shrub root strength within the riparian areas. It is unlikely that management activities within the project area would cause alteration of peak water flows sufficient to affect channel morphology because of the high number of retention trees.

Objective 4. The Proposed Action would maintain existing water quality. The action is unlikely to have an impact on stream temperatures because of the reserves around streams. Although some microclimatic changes would be expected in the thinned area, stream shading would not be reduced. In addition, the retention of 80 to 105 trees per acre in the upland areas would further minimize the change to existing shading conditions. A lack of new stream crossings would eliminate direct physical impacts to stream channels.

Objective 5. The Proposed Action would not prevent or retard restoration of the sediment regime under which this aquatic ecosystem evolved. The probability of sediments entering streams from the new spurs and landings would be low due to the distance the new spurs/landings would be from streams (at least 200 feet). Design features, such as outsloping the roads, building to minimum size, blocking and waterbarring, and subsoiling the new roads upon completion of the project (in 1-2 years), would further reduce the potential for erosion and sedimentation. Following the BMP's for yarding would also greatly minimize the potential for sedimentation. The Riparian Reserves around all streams would provide for filtering of any erosion potentially created from yarding or new roads.

During operations, the use of existing roads for timber haul could produce an increase in sedimentation because some of the existing roads are likely to route sediment flow via ditch lines to cross drains and stream crossings. However, the additional amount of sediment from the project would be expected to be low relative to natural background levels. Haul during wet weather would be on rock surface roads, and minimal disturbance of cut and fill slope vegetation of existing roads would be expected. All haul on natural surface roads would be during dry weather only.

Objective 6. The Proposed Action could contribute to an increase in summer low flows and overall water yield, because of reduction in evapotranspiration and interception due to the removal of some of the trees. The effect would be expected to be minimal because much of the canopy would be retained. New roads would not be expected to extend the length of drainage networks because of their design features. Some compaction would be expected from the proposed yarding methods. Subsoiling of skid trails upon completion of yarding would likely mitigate impacts to meet the RMP standards. Effects on the timing and magnitude of peak flows would be expected to be low.

Objective 7. The Proposed Action would maintain the existing timing, variability, and duration of floodplain inundation and water table elevation. Much of the vegetative cover of the project area would be retained.

Objective 8. The Proposed Action would maintain the species composition and structural diversity in riparian areas and would maintain the amount and distribution of coarse woody debris sufficient to sustain the present physical complexity and stability of the riparian areas.

Objective 9. The Proposed Action would maintain the existing habitat of native plant, invertebrate, and vertebrate riparian-dependent species. The untreated portion of the Riparian Reserves would continue to provide habitat for these species.

Based on the above analysis of the effect on attainment of the ACS objectives, the Proposed Action is consistent with the ACS and the objectives for the Riparian Reserves, and would not prevent or retard

attainment of any of the ACS objectives.

Issue 2: How will timber harvest and roading affect Spotted Owl dispersal habitat?

Spotted Owl

The Proposed Action would degrade but not eliminate the functionality of dispersal habitat provided by the existing stand. The Proposed Action would result in a canopy closure above 40%, maintaining dispersal habitat. However, opening the canopy would degrade the existing dispersal habitat quality. Owls dispersing through the stand would be more subject to predation and have less protection from the elements until the canopy and subdominant trees begin to develop.

Dispersal habitat on federal lands within the forested portion of the Long Tom watershed is currently at 56%. Non-federal lands provide additional habitat for this species, but specific habitat levels on these properties are difficult to ascertain.

Dispersal habitat for the spotted owl is of particular importance in this vicinity of the watershed because it is located north of the South Valley Area of Concern (AOC). This AOC provides an important link between the Coast Range and Cascade Mountains, allowing a genetic flow across the southern Willamette Valley for spotted owls and other species associated with mature forested habitat.

Because of the modification of dispersal habitat, this project would be considered "May Affect, but is Not Likely to Adversely Affect" the northern spotted owl.

Upon completion of this proposed action, the project area would still function as dispersal habitat, given that the canopy closure would remain above 40%. This stand diversity would be sufficient to provide temporary habitat and travel corridors for transitory owls. In the long-term, habitat for the northern spotted owl, marbled murrelet, and bald eagle would gradually improve over time, until the next entry.

Issue 3: Would timber harvest and roading have an effect on Survey and Managed species?

The two confirmed red tree vole nests (one active and one inactive) would be buffered out in one 11 acre site. Because the post-harvest canopy closure would remain above 40%, there still would be arboreal travel routes from some trees to others. As the stand matures, this dispersal element would improve until the next entry. Some individual red tree voles may be inadvertently injured or displaced, but due to retention of known nest sites, aboreal travel routes and adequate structure for future nest sites, there would not be an overall negative impact on this species.

5.3 Alternative 2 - Commercial Thinning in Upland Only

Effects to spotted owl dispersal habitat in the upland would be similar to the proposed action. The effects to spotted owl dispersal habitat in the riparian reserve would be similar to the "no action" alternative.

5.4 Alternative 3-No Road Construction and Decommissioning

Issue 1: How will timber harvest and roading affect attainment of the Aquatic Conservation Strategy Objectives at the watershed scale?

Impacts would be similar to Alternative 1.

Issue 2: How will timber harvest and roading affect Spotted Owl dispersal habitat?

Effects to spotted owl dispersal habitat would be similar to the proposed action except the treatment area would be 85 acres as opposed to the 155 acres under the proposed alternative. There would be no impacts from road construction as a result of this alternative.

Issue 3: Would timber harvest and roading have an effect on Survey and Managed species?

As with Issue 2, effects to Survey and Manage species (specifically the red tree vole) would be similar to the proposed action except treated acres would be reduced to 98 under this alternative. There would be no impacts as a result of road construction under the alternative.

5.5 Alternative 4 - No Action

Issue 1: How will timber harvest and roading affect attainment of the Aquatic Conservation Strategy Objectives at the watershed scale?

Alternative 4 is consistent with the ACS and the objectives for the Riparian Reserves, and would not prevent or retard attainment of any of the ACS objectives.

Issue 2: How will timber harvest and roading affect dispersal habitat for northern spotted owls?

The "No Action" alternative would not modify dispersal habitat for the northern spotted owl either in the upland or Riparian Reserve. These areas would continue to contribute cumulatively to dispersal habitat within the watershed and across the landscape. Within the Riparian Reserve, the long term development of mature and late-successional forests and their associated benefits to late-successional dependent species would occur slowly through natural disturbances and forest succession. Wildlife species associated with the current habitat conditions would persist under the present stand conditions but would be subjected to changes dependent upon future stand characteristics, disturbances, and future management. As the stand matures slowly over time, species more associated with later seral stages would be expected to occupy this stand.

Issue 3: Would timber harvest and roading have an effect on Survey and Managed species?

Under this alternative there would be no timber harvest or road building.

6.0 CONSULTATION AND COORDINATION

6.1 Project Development

The proposed action and alternatives were developed and analyzed by the following interdisciplinary team of BLM specialists:

NAME	TITLE	DISCIPLINE
Karin Baitis	Soil Scientist	Soils
Mark Stephen	Forest Ecologist	Ecology
Eric Meyers	Engineer	Roads/Transportation

Dave Reed	Fuels Specialist	Fuels/Air Quality
Michael Southard	Archaeologist	Cultural Resources
Phil Redlinger	Silviculturist / Timber Planner	Silviculture
Al Corbin	Timber Manager	Timber
Dan Crannell	T & E and Wildlife Biologist	Wildlife Habitat
Leo Poole	Fisheries Biologist	Fisheries
Cheshire Mayrsohn	Botanist	Botanical Resources
Saundra Miles	Recreation Planner	Visual Resources and Recreation
Gary Hoppe	Landscape Planner	Planning and Environmental Coordination
Graham Armstrong	Forest Hydrologist	Hydrology

6.2 Consultation

U.S Fish and Wildlife Service

This proposed action is addressed in the FY 2001Habitat Modification Biological Opinion which has been extended by the U.S. Fish and Wildlife Service to cover FY 2002 habitat modification projects. All required mitigation measures included in this Opinion would be followed to ensure compliance with the Endangered Species Act.

Because of the modification of dispersal habitat, this project "May Affect, but is Not Likely to Adversely Affect" the northern spotted owl.

No habitat for the marbled murrelet exists within the harvest unit, but some residual trees with appropriate nesting structure do exist within 0.25 mile north of the proposed action. Consequently, this action "May Affect and is Likely to Adversely Affect" the marbled murrelet due to disturbance of unsurveyed habitat.

There would be no effect to the bald eagle.

No candidate, proposed, or listed threatened and endangered fish species under the Endangered Species Act are found in the Long Tom River Watershed above Fern Ridge dam. No consultation is required for listed species, critical habitat or essential fish habitat.

Confederated Tribes of the Grande Ronde and the Confederated Tribes of Siletz

The Bureau of Land Management, Coast Range Resource Area consulted with the Confederated Tribes of Siletz, and the Confederated Tribe of Grande Ronde. No response was received.

7.0 REFERENCES

USDA, Forest Service and USDI, Bureau of Land Management. February 1994. *Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl.*

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USDI, Bureau of Land Management. November 1994. *Eugene District Proposed Resource Management Plan/Environmental Impact Statement.* Eugene District Office, Eugene, Oregon.

USDI, Bureau of Land Management. June 1995. *Eugene District Record of Decision and Resource Management Plan.* Eugene District Office, Eugene, Oregon.

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8.0 Comments and Responses

This section considers and responds to comments or concerns of Oregon Natural Resources Council and US Fish and Wildlife Service.

The Oregon Natural Resources Council raised several questions concerning snags and the heavier thinning prescription within the Riparian Reserve.

Comment: "*We are surprised that there is no mention of current snag stocking or attempts to protect standing snags. What is the current number of snags per acre and will they be retained? We recommend retaining snags in aggregate with adjacent trees to protect both the snags and loggers.*"

Response: Stand exams accomplished within the project area showed less than 3 snags per acre for the unit as a whole. In addition to the stand exams, botany field surveys documented the presence of very few large snags. The few large snags that remain were estimated to be less than 40 feet tall with diameters ranging from about 3-5 feet. The botany survey notes also described many hardwoods (mostly maple and chinquapin) that had been girdled years ago, creating an abundance of chinquapin snags about 70 feet tall. Many of the girdled maples are still alive.

Design feature 3 of the EA provides for the protection of existing snags. Directional felling and yarding will also be utilized to protect residual snags consistent with State safety practices. While it is possible a few of these may be required to be felled as danger trees, efforts are made in the planning process and within contract administration during logging operations to minimize this. The majority of the snags can and will be retained. Those that are required to be felled will be retained on site as down wood. We have had good success with this guideline.

Natural disturbances such as wind, and disease will continue to provide additional pulses of snags and down wood over time. In addition to these and other natural disturbances, the Eugene District has accomplished numerous projects to provide additional snag and down wood habitat in the past and will continue to provide projects of this nature in the future.

Comment: *"ONRC is concerned that the riparian reserve logging calls for cutting and yarding more trees per acre than prescriptions in the upland forests. The EA does not explain why heavier prescriptions are needed in the riparian reserves, leaving the reviewer to speculate. While BLM might feel that a single entry into the riparian reserves with the heavier thins is the best use of time and resources, ONRC feels the agencies should exercise caution when calling for active management in riparian reserves."*

Response: The objectives of the Riparian Reserve Thinning are to meet the long term objectives of the Aquatic Conservation Strategy (ACS) and to develop large trees within the reserve more quickly than would develop naturally.

Both the upland prescription and the Riparian Reserve prescription for the proposed action are designed to reduce tree competition by providing more growing space for the residual trees thus increasing or maintaining tree growth. While there is some overlap in the retention density of the upland (80-105 TPA) versus the retention density of the riparian (70-95 TPA), in general, a wider spacing between retention trees is desired in the Riparian Reserve. The Riparian Reserve prescription strives to accelerate or maximize individual tree growth and large canopies while providing for species and structural diversity within the stand for the benefit of wildlife. This requires wider spacing of the residual trees. This wider spacing also enhances the development of the understory vegetation by providing additional light to the forest floor. By contrast, the objective of the upland treatment is to primarily enhance timber production (stand volume). This requires a higher residual stand density (or closer spacing) of the residual trees.

As a precautionary measure, no-treatment buffers adjacent to the streams, were included within the project design to provide shade to the stream and temper changes in stream/riparian microclimates from edge effects, to provide for slope stability and the associated protection from stream sedimentation, and to maintain litter inputs to stream/riparian areas. These benefits should contribute to maintaining current water quality and stream function.

The U.S. Fish and Wildlife Service letter addressed three general areas of concern: riparian reserves; noxious weeds and native plants; and coarse woody debris (CWD)/ large woody debris (LWD).

Riparian Reserve Concerns

Comment: *"It would be helpful if the EA further described what silvicultural prescriptions are to be used in the riparian reserves, and defined what the objectives are, and how these prescriptions will maintain or improve current conditions to achieve ACS objectives." "What beneficial affects will the thinning within the riparian reserve have toward accomplishing ACS objectives?"*

Response: The purpose and need of the thinning treatment within the Riparian Reserve is to accelerate the attainment of the ACS objectives. This is addressed on page 3 of the EA and references the ROD, RMP pg 18. The Riparian Reserve silvicultural prescription and its resource objectives were stated in the EA on page 5. The objectives of the Riparian Reserve Thinning are to meet the long term objectives of the Aquatic Conservation Strategy (ACS) and to develop large trees within the reserve more quickly than would develop naturally. The EA addressed each individual ACS objective.

The riparian treatment would promote development of large conifers, development of multi-layered canopies, and diversity of species composition within the Riparian Reserve. This density treatment within the Riparian Reserves would accelerate tree growth to provide future sources of large wood for stream channels (providing more structure, cover, pools, and retention of gravel and small wood debris). This in-stream structure would provide for improved water quality by trapping sediments, stabilizing stream channels, and slowing high flows. Over the long term, this would improve fish habitat, increase the opportunity for exchange of ground water and stream water, and would maintain normal flooding of the floodplain. The no-treatment stream buffers adjacent to the streams would protect streambanks, provide shade, and would contribute to maintaining current water quality and conditions of riparian and aquatic functions. This would include tempering of stream/riparian microclimates from edge effects, retaining slope stability and the associated protection from stream sedimentation, and maintaining litter inputs to stream/riparian areas. Maintenance of riparian vegetation within the no-treatment buffer would provide protection of aquatic habitat.

The thinning would benefit those species that rely on larger trees, snags and down wood for habitat (i.e. pileated woodpeckers and some bat species for roosting habitat). Existing down logs, larger diameter green trees, and snags to the extent possible would be left to continue functioning in the forest. Retention of snags

would provide habitat for cavity nesting.

Comment: *"The Service would like to see further description of the riparian reserve treatment. How is this treatment different than the treatment to be used on the upland matrix land?"*

Response: Both the upland and Riparian Reserve prescriptions were addressed on page 5 of the EA and include design features to address resource concerns on page 6 and 7 of the EA. Both the upland prescription and the Riparian Reserve prescriptions are designed to reduce tree competition by providing more growing space for the residual trees thus increasing or maintaining tree growth. While there is some overlap in the retention density of the upland (80-105 TPA) versus the retention density of the riparian (70-95 TPA), in general, a wider spacing between retention trees is desired in the Riparian Reserve. The Riparian Reserve prescription strives to accelerate or maximize individual tree growth and large canopies while providing for species and structural diversity within the stand for the benefit of wildlife. This requires wider spacing of the residual trees. This wider spacing also enhances the development of the understory vegetation by providing additional light to the forest floor. By contrast, the objective of the upland treatment is to primarily enhance timber production (stand volume). This requires a higher residual stand density (or closer spacing) of the residual trees.

Comment: *"How will the riparian reserve treatment benefit riparian dependent species? How will thinning within the riparian reserves maintain the existing habitat of native plants, invertebrates, and riparian dependent species, including the northern spotted owl?"*

Current vegetative and structural diversity would be maintained by reserving hardwood trees, western redcedar, and PacificYew. Herbaceous, fungal, and bryophyte diversity would be maintained by keeping the disturbance of the down woody debris to a minimum. Both spotted owls and marbled murrelets would benefit from the Riparian prescription in the long term. The prescription strives to accelerate the development of larger tree crowns and tree size to provide better habitat in the future. The riparian prescription would benefit fish and aquatic invertbrates by providing a future source of large down wood for instream structure. The aquatic and fisheries benefits of the thinning were addressed further above relative to the riparian and aquatic objectives.

Noxious Weeds and Native Plants Concerns

Comment: *"The Service is concerned that the threat of noxious weed infestation has not been adequately addressed. Are there noxious weed sites within the project area? Has the project been thoroughly surveyed for noxious weeds? Will the thinning accelerate the spread of noxious weeds through opening the canopy? Have the log haul routes been designed to avoid roadside weed infestations? Are the mill yards where these logs are going infested with noxious weeds? If so, will the log trucks be required to wash in between trips to avoid contamination of the project area?"*

Response: The presence of noxious weeds was documented during vegetation surveys in the project area in July of 1997, and August of 1999. An additional roadside survey for presence of noxious weeds within the project area was completed in December of 2000. In those surveys the following noxious weeds were identified in the area: Canada thistle (*Cirsium arvense*), bull thistle (*Cirsium vulgare),* scotch broom (*Cytisus scoparius*), tansy ragwort (*Senecio jacobeea*), and St. John's wort (*Hypericum perforatum*). Scotch broom was addressed in the EA due to its greater prevalence along roads within the project area and throughout the watershed.

Post treatment monitoring of past thinning projects has not showed any substantial increase or spread of noxious weeds into the adjacent forest understory although that potential may exist in the short term due to the temporary increase in light to the forest floor. As the residual trees responds to the thinning the overstory canopy gradually closes, reducing available light to the forest floor.

Haul routes have not been designed to avoid roadside weed infestations since many of the project areas have limited single road access and much of the current road system has at least some occurrence of noxious weeds along a portion of the travel route. We have no authority to inventory or regulate noxious weed presence in private mill yards and we do not require log trucks to be washed in between trips since their use is limited to the roadway. Design feature 1 of the EA does require cleaning of all yarding and road construction equipment. Though not addressed in the EA, the BLM actively treated the roadside infestations of scotch broom within the project area by cutting and pulling efforts in 1999. On-going noxious weed monitoring and control projects are currently being implemented on a larger scale across the Eugene District forest road system.

Coarse Woody Debris (Cwd)/ Large Woody Debris (Lwd) Concerns

Comment: *"In section 4.8, Fuels/ Downed Woody Debris, the EA states that fuel loading is low, and there is some decay class 4 and 5 CWD in the project area. Because many snags are deemed as hazards, they are often felled, and may be eliminated from the site by treatments for fuel reduction after the harvest. The Service is concerned that the number of snags remaining after harvest activities conclude may be insufficient to supply future CWD needs within the project area.*"

Response: The only fuel reduction measures planned in conjunction with this project are fuel concentrations or piles of slash within 25 feet of the existing mainline roads only. Design feature 3 of the EA provides for the protection of existing snags and future snag recruitment needs as determined by a wildlife biologist. Design feature 2 of the EA provides for retention of down material of decay classes 3, 4, and 5. Directional felling and yarding will also be utilized to protect residual snags consistent with State safety practices. While it is possible a few of these may be required to be felled as danger trees, efforts are made in the planning process and within contract administration during logging operations to minimize this. The majority of the snags can and will be retained. We have had good success with this guideline. Those that are required to be felled will be retained on site as down wood.

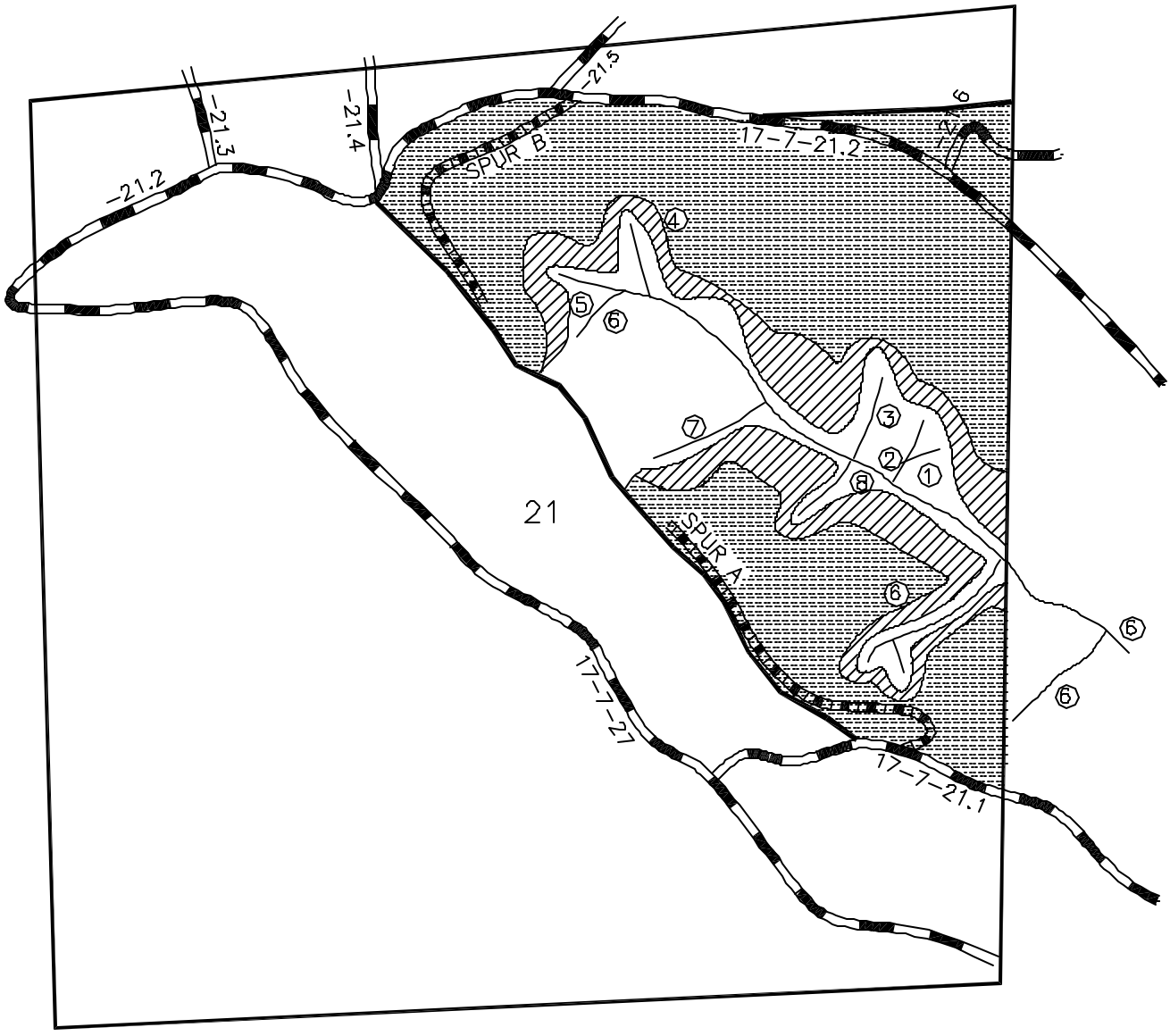
Natural disturbances, such as wind and disease, will continue to provide additional pulses of snags and down wood over time. In addition to these and other natural disturbances, the Eugene District has accomplished numerous projects to provide additional snag and down wood habitat in the past and will continue to provide projects of this nature in the future.

ALTERNATIVE 1

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

BISHOPS HAT THIN EA MAP

T. 17S , R. 7W , SEC. 21 , WILL. MER., EUGENE DISTRICT



LEGEND

SCALE: 1" = 1,000 FT.

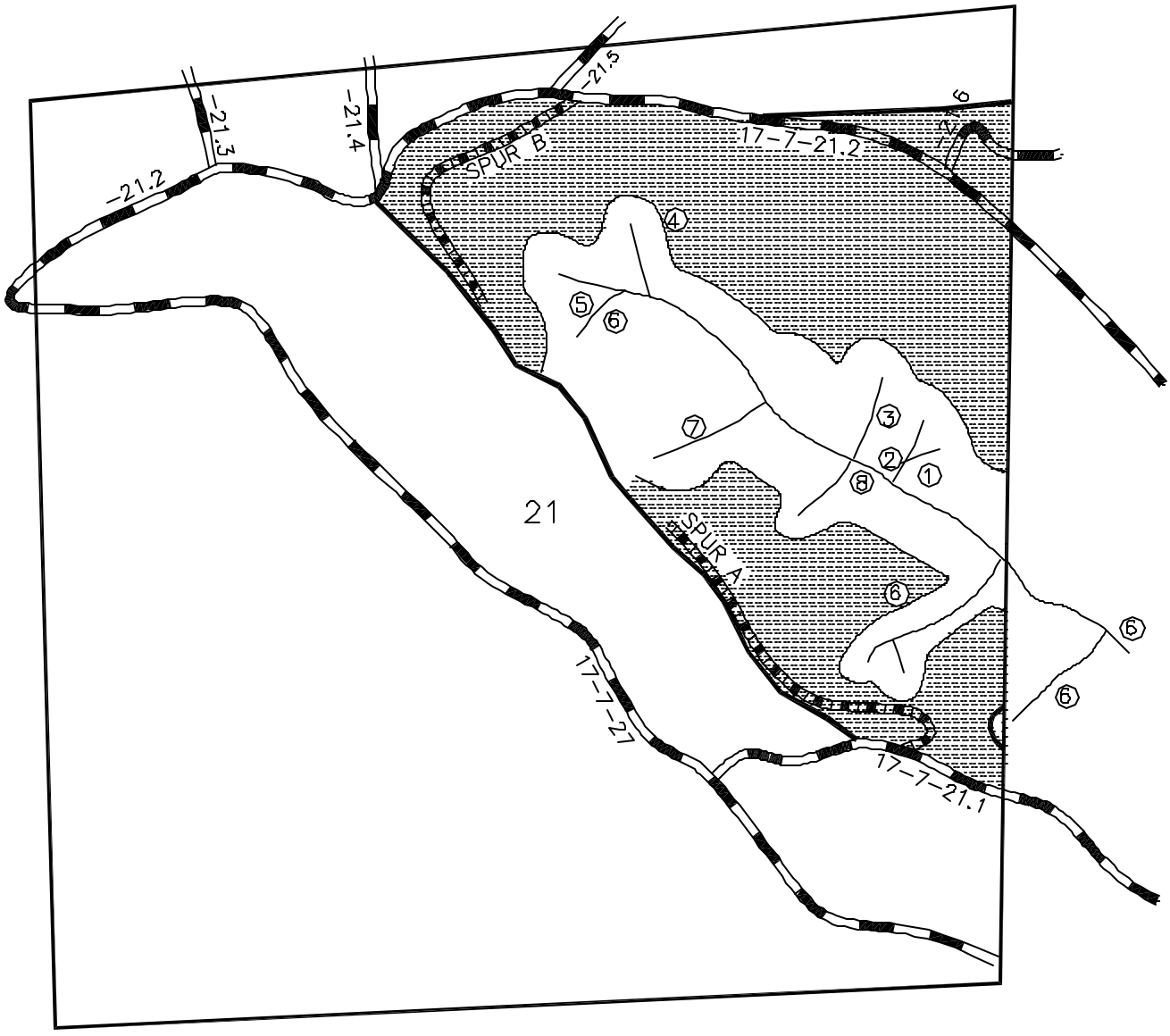
- NO TREATMENT
- UPLAND AREA TREATED
- RIP RES AREA TREATED
- PROPOSED BOUNDARY
- EXISTING ROADS
- TEMP SPURS
- STREAM
- ① STREAM NUMBER

ALTERNATIVE 2

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

BISHOPS HAT THIN EA MAP

T. 17S , R. 7W , SEC. 21 , WILL. MER., EUGENE DISTRICT



LEGEND

SCALE: 1" = 1,000 FT.

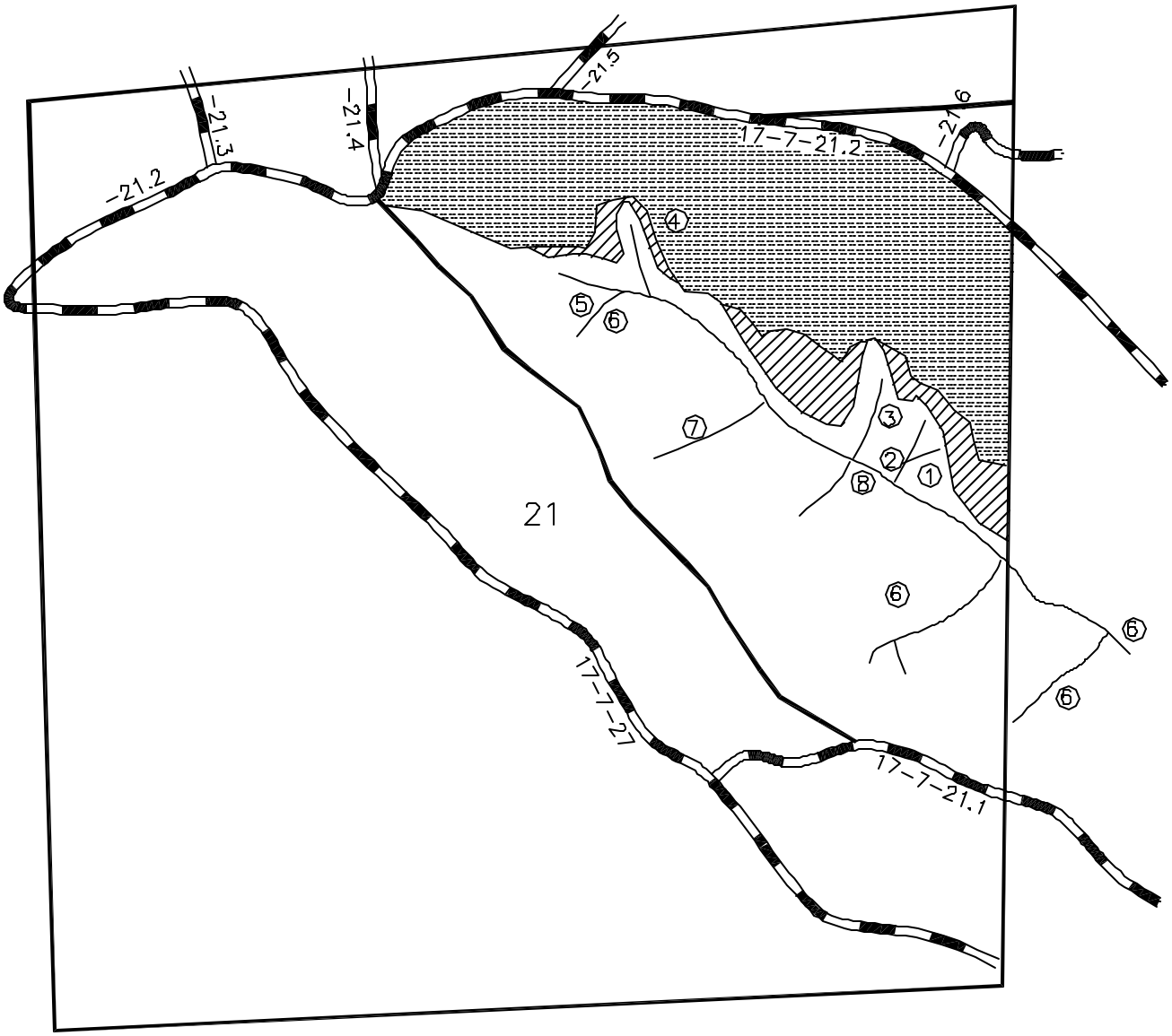
- NO TREATMENT
- UPLAND AREA TREATED
- RIP RES AREA TREATED
- PROPOSED BOUNDARY
- EXISTING ROADS
- TEMP SPURS
- STREAM
- ① STREAM NUMBER

ALTERNATIVE 3

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

BISHOPS HAT THIN EA MAP

T. 17S , R. 7W , SEC. 21 , WILL. MER., EUGENE DISTRICT



LEGEND

SCALE: 1" = 1,000 FT.

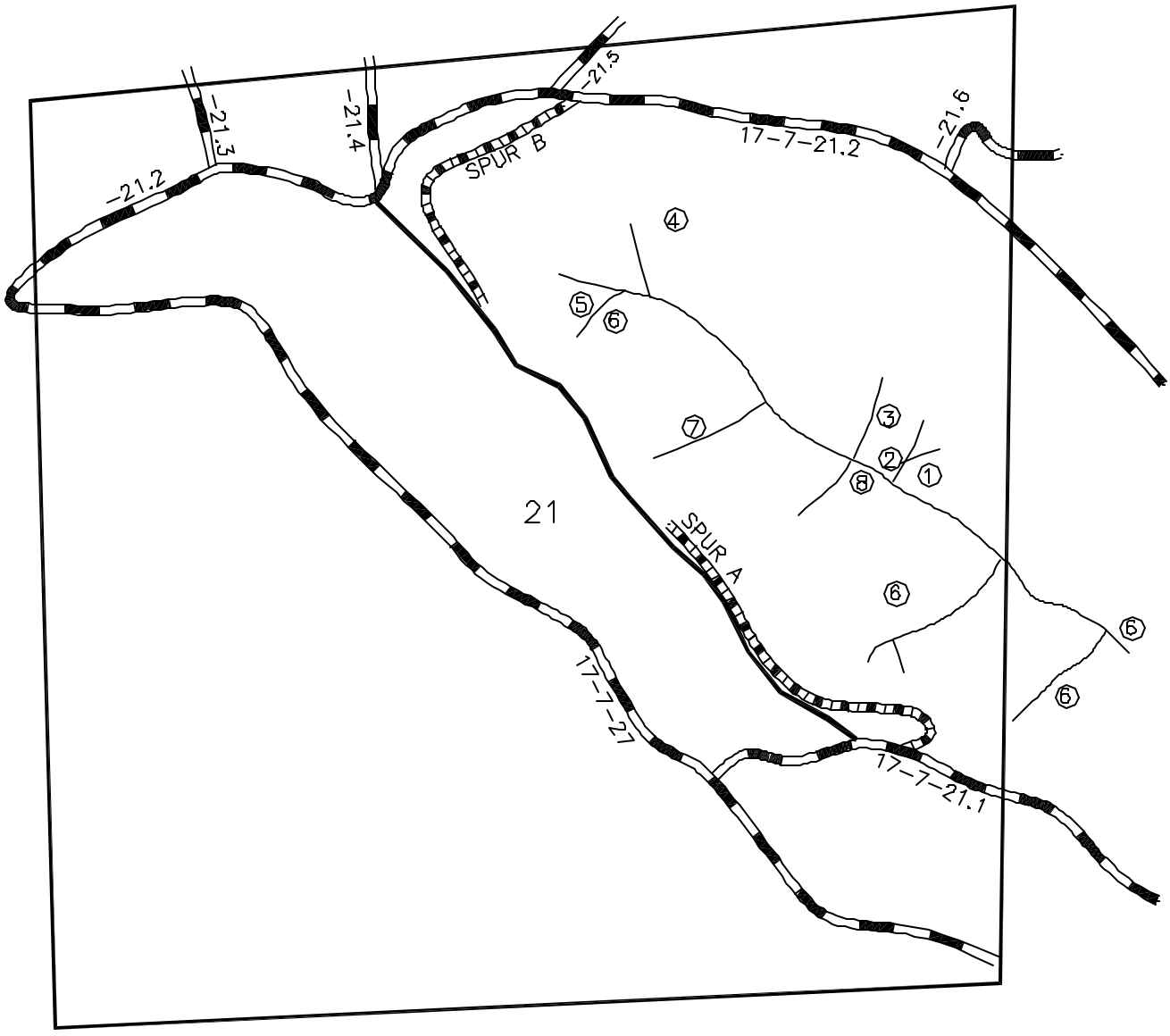
- NO TREATMENT
- UPLAND AREA TREATED
- RIP RES AREA TREATED
- PROPOSED BOUNDARY
- EXISTING ROADS
- TEMP SPURS
- STREAM
- ① STREAM NUMBER

ALTERNATIVE 4

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

BISHOPS HAT THIN EA MAP

T. 17S , R. 7W , SEC. 21 , WILL. MER., EUGENE DISTRICT



LEGEND

SCALE: 1" = 1,000 FT.

- NO TREATMENT
- UPLAND AREA TREATED
- RIP RES AREA TREATED
- PROPOSED BOUNDARY
- EXISTING ROADS
- TEMP SPURS
- STREAM
- ① STREAM NUMBER